



Chain Valley Colliery Monthly Website Report – September 2020

Site:	Chain Valley Colliery
Department:	Technical Services
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Introduction

Great Southern Energy Pty Ltd (trading as Delta Coal) operates the Chain Valley Colliery, an underground coal mine at the southern end of Lake Macquarie.

Chain Valley Colliery operates under the following regulatory instruments:

- Section 66(6) of the *Protection of the Environment Operations Act 1997*, to make monitoring data related to an Environment Protection Licence (EPL) publically available;
- Conditions 8 & 11, Schedule 6, of Development Consent SSD-5465 (as modified), issued under the *Environmental Planning and Assessment Act 1979* to provide details of monitoring results and environmental performance;
- An Environment Protection Licence (EPL 1770) issued under the *Protection of the Environment Operations Act 1997*; and
- A Water Access Licence (WAL41508), Aquifer (Sydney Basin – North Coast Groundwater Source) for 4,443 unit shares (megalitres).

The above development consent and licences require various monitoring and reporting requirements to be undertaken by Delta Coal for Chain Valley Colliery.

This report provides environmental monitoring data from Chain Valley Colliery for the period of 1st to 30th of September 2020.

Details of the Chain Valley Colliery EPL 1770 are provided below.

Chain Valley Colliery Information	
Premises name	Chain Valley Colliery
Address	Construction Road, Chain Valley Bay, NSW, 2259
Licensee	Great Southern Energy Pty Ltd
EPL #	1770
EPL location	http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=50980&SYSUID=1&LICID=1770

The overall purpose of this monthly report is to keep stakeholders informed of the environmental monitoring results at Chain Valley Colliery and maintain a transparent and accountable reporting system.

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Scope

This report presents the results from the various environmental monitoring programs undertaken for Chain Valley Colliery. Results are presented monthly with annual data and averages.

Where applicable, the results of the monitoring programs are compared with the relevant criteria (from the EPL or Development Consent) to assess compliance. Monitoring results presented in this report include:

- Water – quality;
- Water – volume;
- Depositional dust; and
- Weather data.

Definitions

g/m²/month – grams per square metre per month;

kL – kilolitre;

ML – megalitre;

mg/L – milligrams per litre;

TSS – total suspended solids;

µg/L – micrograms per litre; and

µS/cm – microSiemens per centimetre.

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References

ALS Group - Monthly Water Monitoring Results **September 2020**

ALS Water - Report of Analysis **September 2020**

Steel River Testing - Dust Deposition Report **September 2020**

Development Consent SSD-5465 (as modified)

Environment Protection Licence (EPL) 1770 (Licence version date: 2 April 2019)

Monitoring Results

Water – Quality

Water quality results for September 2020 monthly surface water sampling at Chain Valley Colliery, EPA Discharge Point 1 are presented below.

September 2020	
EPL	1770
Licensee	Great Southern Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	22-Sep-2020
Date Reported	28-Sep-2020
Sampling Point	1

Parameter	Units	Limit	Result
Biochem. Oxygen Demand	mg/L	-	4
Enterococci	col/100mL	-	220
Faecal Coliforms	CFU/100mL	200	~4
pH	pH	6.5-8.5	7.91
Total Sus. Solids	mg/L	50	15

As detailed above, results for monthly surface water sampling were below the relevant limits where applicable.

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Water – Volume

Monthly water volumes discharged from the site are summarised below.

September 2020	
EPL	1770
Licensee	Great Soutehrn Energy Pty Ltd
Premises	Chain Valley Colliery
Date Sampled	Daily
Date Reported	Refer report date
Discharge volume limit	12161 kilolitres per day
Sampling Point	1

Date (24 hour period)	Unit	Volume
01/09/2020	kL	5466
02/09/2020	kL	6030
03/09/2020	kL	3955
04/09/2020	kL	5053
05/09/2020	kL	5648
06/09/2020	kL	5362
07/09/2020	kL	4225
08/09/2020	kL	3241
09/09/2020	kL	2182
10/09/2020	kL	1282
11/09/2020	kL	8433
12/09/2020	kL	4665
13/09/2020	kL	4076
14/09/2020	kL	3399
15/09/2020	kL	2620
16/09/2020	kL	4282
17/09/2020	kL	6075
18/09/2020	kL	6510
19/09/2020	kL	6409
20/09/2020	kL	6501
21/09/2020	kL	6126
22/09/2020	kL	4915
23/09/2020	kL	6064
24/09/2020	kL	6371
25/09/2020	kL	6483
26/09/2020	kL	6088
27/09/2020	kL	6370
28/09/2020	kL	6588
29/09/2020	kL	6146
30/09/2020	kL	6139

Average	kL	5223
Minimum	kL	1282
Maximum	kL	8433

The daily water volumes at EPA Discharge Point 1 during September 2020 were below the relevant limit.

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Water – Groundwater Discharge

Groundwater discharged from underground workings to the CVC Pollution Control Dams within the surface operational area has been detailed below. Chain Valley Colliery operates Water Access License permitting the extraction of 4,443 megalitres per water year (financial year calander).

CVC Groundwater to Surface Totals FY2020-2021		
Date (month)	Discharge (ML)	Discharge (ML YTD)
Jul-20	136.01	136.01
Aug-20	94.56	230.57
Sep-20	151.43	382
Oct-20		
Nov-20		
Dec-20		
Jan-21		
Feb-21		
Mar-21		
Apr-21		
May-21		
Jun-21		

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Air Quality - Depositional Dust

Monthly depositional dust results are shown below. Dust deposition gauges were sampled and analysed in accordance with the project approval, CVC Air Quality Management Plan and relevant Australian Standards.

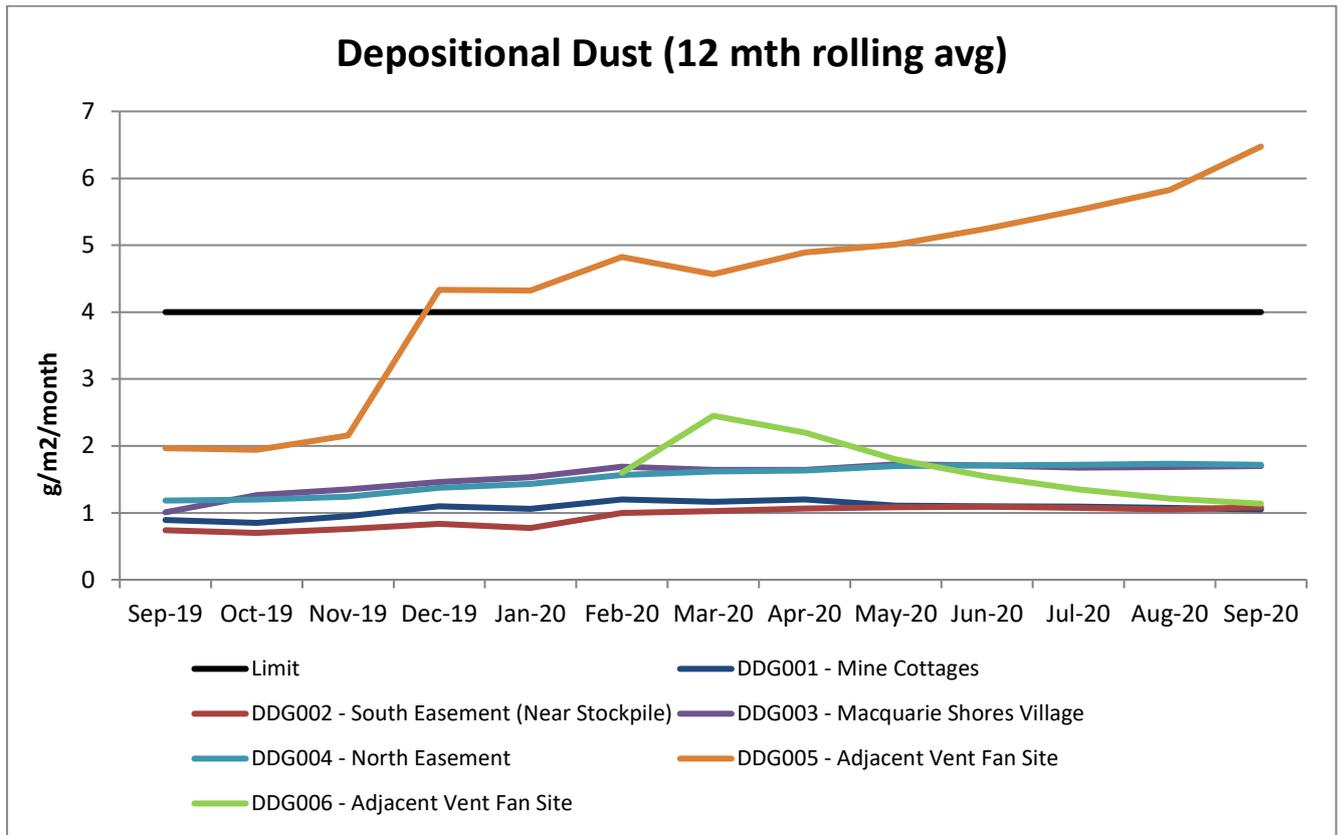
September 2020	
EPL	1770
Limit	4g/m ² /month
Sampling Date	07/08/2020 to 07/09/2020
Site	Insoluble Matter (g/m ² /month)
DDG001	0.4
DDG002	1.1
DDG003	1.0
DDG004	0.5
DDG005	9.8
Notes: - For site locations refer to Chain Valley Colliery Air Quality Management Plan. DDG005 noted to be frequently impacted by cross-contamination due to nearby activity un-related to Delta Coal operations.	

For the period of September 2020, no exceedances of depositional dust criteria were identified for Chain Valley Colliery.

A 12 month rolling average of depositional dust concentrations has been presented below, it is noted that due to frequent contamination of dust gauge DDG005 and the bushfire events occurring in December 2019 and January 2020 the rolling average exceeds criteria. DPIE have been notified of each contamination event to the dust gauge. Dust Gauges DDG001, DDG002, DDG003 and DDG004 are located within a closer proximity to Chain Valley Colliery. DDG005 was intended to represent the fan site, subsequently, DDG006 was installed in a location still considered representative of the CVC vent fan site, but not subject to contamination. Delta Coal currently have a submission with DPIE to amend the Chain Valley Colliery Air Quality Management Plan to replace location DDG005 with DDG006.

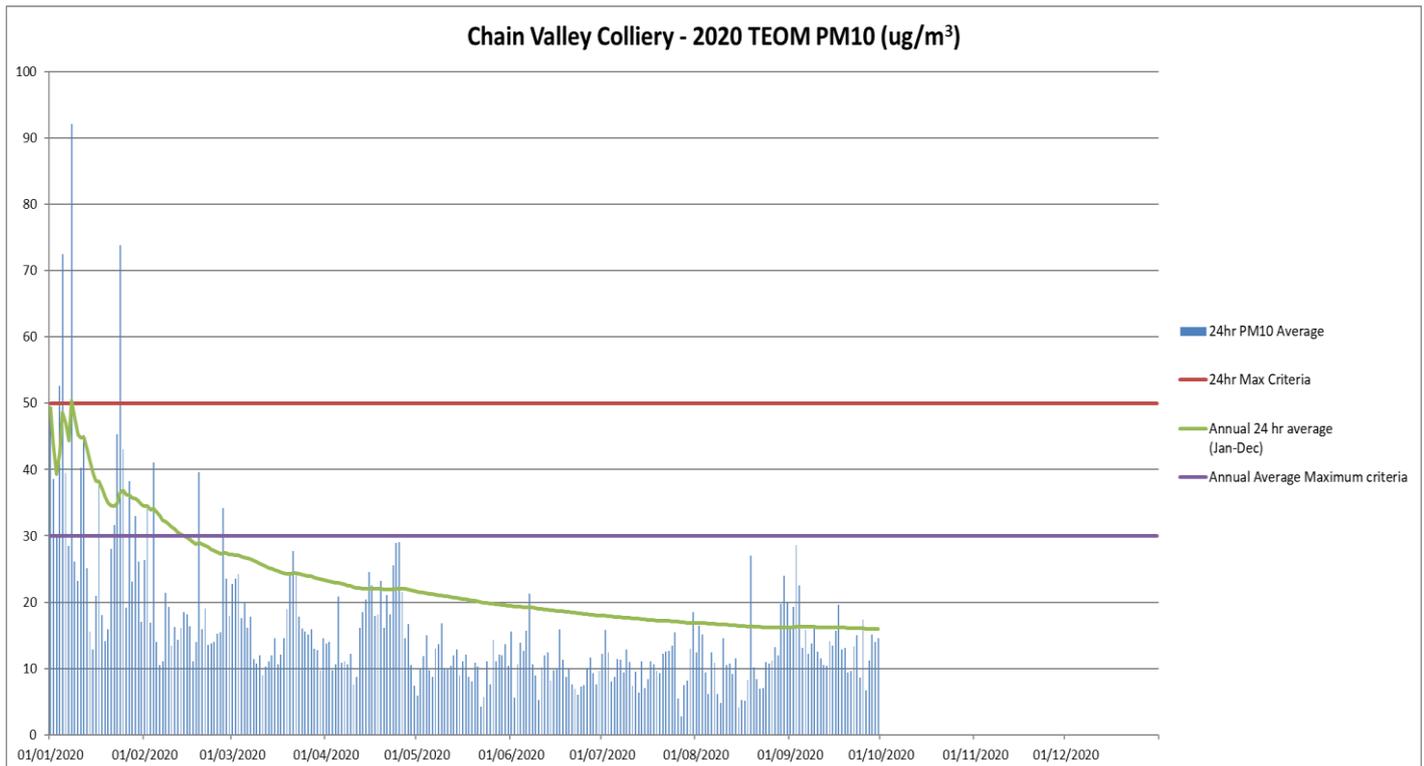
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Air Quality – PM₁₀

The 24hr PM₁₀ average from CVC's Tapered Element Oscillating Microbalance (TEOM) is presented below for the year to date.



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Annual 24hr PM₁₀ average maximum criteria for September 2020 is below the annual average maximum criteria limit. A summary of valid data for CVC's TEOM is presented below for the year to date.

Variable	September	Total	Valid
A/C Temp	100%	8640	8640
A1	100%	8640	8640
A1_Scaled	100%	8640	8640
Bypass Flow	100%	8640	8640
Cap Temp	100%	8640	8640
Case Temp	100%	8640	8640
Config	100%	8640	8640
Dew Point	100%	8640	8640
Dig-In	100%	8640	8640
Dig-Latch	100%	8640	8640
ESN	100%	8640	8640
Filter Freq	100%	8640	8640
Filter Load	100%	8640	8640
Humidity	100%	8640	8640
MC	100%	8640	8640
MC 12Hr	100%	8640	8640
MC 1Hr	100%	8640	8640
MC 24Hr	100%	8640	8640
MC 30min	100%	8640	8640
MC 8Hr	100%	8640	8640
MC Total	100%	8640	8640
Mobile Signal	100%	8640	8640
Noise	100%	8640	8640
PM10 Flow	100%	8640	8640
Pressure	100%	8640	8640
Site	0.0%	8640	0
Temperature	100%	8640	8640
Tube Temp	100%	8640	8640
Vac Pressure	100%	8640	8640
Volts	100%	8640	8640

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Weather Data

A summary of weather data recorded by a meteorological monitoring station at the adjacent Mannering Colliery is presented below for the year to date. (EPA ID no. 26).

Monthly Weather Data			
Licensee	Great Southern Energy Pty Ltd		
Location	Mannering Colliery Meteorological station		
Date published	Refer report date		
Date sampled	Daily		
Date obtained	08/10/2020		
Month	Total Rainfall/Month mm	Min Temp	Max Temp
Jan-20	28	18	44
Feb-20	350	16	37
Mar-20	159	12	38
Apr-20	46	9	28
May-20	88	5	27
Jun-20	67.6	4.5	22.7
Jul-20	232.8	3.7	23.3
Aug-20	55.2	2.1	25.2
Sep-20	29.2	5.3	30.2

Variable	September	Total	Valid
10m Temp	100%	8640	8637
2m Temp	100%	8640	8637
A1	100%	8640	8637
A1_Scaled	100%	8640	8637
Assumed Temp	100%	8640	8637
Barometric	100%	8640	8637
Config	100%	8640	8637
Daily Evap	100%	8640	8637
Daily Rain	100%	8640	8637
Delta T	100%	8640	8637
Dew Point	100%	8640	8637
Dig-In	100%	8640	8637
Dig-Latch	100%	8640	8637
ESN	100%	8640	8637
FDI	100%	8640	8637
Heat Index	100%	8640	8637
Humidity	100%	8640	8637
Mobile Signal	100%	8640	8637
Rain	100%	8640	8637
Raw Evap	100%	8640	8637
S Class	100%	8640	8637
Scalar WS	100%	8640	8637
Sigma	100%	8640	8637
Site	0.0%	8640	0
Solar Radiation	100%	8640	8637
Vector WD	100%	8640	8637
Vector WS	100%	8640	8637
Volts	100%	8640	8637
Wind Chill	100%	8640	8637
Wind Direction	100%	8640	8637
Wind Speed	100%	8640	8637
WS Avg	100%	8640	8637
WS Gust	100%	8640	8637